BEFORE THE

FEDERAL ENERGY REGULATORY COMMISSION

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MUSKEGET CHANNEL TIDAL : Docket Number

ENERGY PROJECT : P-13015-001

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Edgartown Town Hall

70 Main Street

Edgartown, MA 02539

Monday, March 7, 2011

The above-entitled matter came on for technical conference, pursuant to notice, at 11:00 a.m., Aisling O'Shea, Stephen Barrett and Michael Watts moderators

P R O C E E D I N G S

(11:00 a.m.)

AISLING O'SHEA: Good morning everyone, and thanks for coming, my name is Aisling O'Shea. I'm with the State Executive Office of Energy and Environment Affairs -- with the MEPA Office. Some of you may be familiar with the Massachusetts Environmental Policy Act, and we are reviewing the Environmental Notification Form for the Muskeget Channel Tidal Project, and we are also doing a joint review with the Federal Energy Regulatory Commission, FERC. And Michael Watts is here from FERC, and he is going to say a few words in a moment.

And so, what we are going to do is start with just introducing ourselves, and then I'm going to a brief overview of the MEPA process, and Mike is going to one for FERC. And then Steve Barrett will be giving us an overview of the project, and then there will be a discussion on the studies and monitoring plans, and then an opportunity then for questions and comments afterwards -- you know, after we do the brief overviews we will then open it up for discussions, questions and comments. And then the plan afterwards, if anyone is interested, to go visit the land fall sites where the proposed cables will come in.

So, I'm not going to say too much more about the MEPA right now, I'm going to do that when I do my overview.

So, I will let Mike introduce himself. And then, I know, Art Smadbeck, is it? Did I get that right? From the Board of Selectmen wants to say a few words, and then if we will have everybody, if you would just say your name, where you are from and what your interest is.

MICHAEL WATTS: Good morning everyone ---

(Adjusting microphone.)

MICHAEL WATTS: Sorry.

Okay, good morning everyone. My name is Michael Watts and I'm from the Federal Energy Regulatory Commission, or FERC, and I'm the Project Coordinator for the Muskeget Channel Tidal Energy Project. I just want to second Aisling, in welcoming you all to this joint meeting between MEPA and the F.E.R.C. I would remind you all to use the FERC sign-in sheet to sign in. And also, if you haven't already done so, please grab yourself a handout to either follow along during the presentation or for future reference.

Finally, I want to make sure you are aware that we do have a court reporter that will be making a transcript of today's meeting. And while the idea is to keep things as informal as possible, but we do ask that you state your name and affiliation before speaking, so your comments can be attributed to you in the transcript for this meeting.

AISLING O'SHEA: Art, did you --- you wanted to

say a few words?

ARTHUR SMADBECK: I Just want to welcome everyone here.

MICHAEL WATTS: You want to introduce yourself?

ARTHUR SMADBECK: Yes, I'm Arthur Smadbeck, and I'm on the Board of Selectmen for Edgartown.

(Pause to adjust microphone.)

ARTHUR SMADBECK: Okay, can you hear me now?

Anyway, I want to thank everybody, each of you in your roles as playing this part and role in helping Edgartown to try and get come a little more environmentally conscious and be able to generate some of our own electricity to play a role in -- also the University of Massachusetts Dartmouth -- to find a platform to experiment with some of these technologies that hopefully will contribute to our energy independence.

I want to particularly thank Steve Barrett, who is --- without him none of us would be here, and he's been our guy from the very beginning and I want to thank him very much. And also to Karen Fuller, who is the town person who in the town is actually the point person for us here. And with that I will relinquish the floor.

AISLING O'SHEA: So, if --- Yeah. If we can just start with everyone that would like to introduce themselves.

JOANN TAYLOR: Yes, I'm JoAnn Taylor and I'm the

MEPA Coordinator for the Martha's Vineyard Commission.

SUE TUXBURY: Sue Tuxbury, I'm with the National Marine and Fisheries Service.

JOHN BAUMMER: John Baummer, I'm a fish biologist with the Federal Energy Regulatory Commission.

TENA DAVIES: Tena Davies, I'm the MADEP's Southeast Region's Wetlands and Water Waste Program.

ALEX STRYSKY: Alex Strysky, from the Boston Office of the DEP.

JOHN MILLER: John Miller, I'm with the Marine Renewable Energy Center.

BRIAN VALITON: Brian Valiton, I'm from the Corps of Engineers, up in Concord, Mass.

MARK LONDON: Mark London, Martha's Vineyard Commission.

JESSICA REMPEL: Jessica Rempel, Massachusetts' Natural Heritage and Endangered Species Program.

KAREN FULLER: Karen Fuller, Edgartown Board of Selectmen.

AMY CHANG: Amy Chang, FERC, wildlife biologist.

JOHN LOGAN: John Logan, Massachusetts Marine Fisheries in Bedford.

PETER BRANNEN: Peter Brannen, Vineyard Gazette.

PAUL FOLEY: Paul Foley, Martha's Vineyard Commission.

PAUL VIGEANT: I'm Paul Vigeant, from UMass Dartmouth.

AISLING O'SHEA: Okay, great. So, I will --

Oh, I need a mic.

(Pause to adjust microphone.)

AISLING O'SHEA: Alright thank you. So, I just have a half a dozen slides just to go over a brief MEPA overview, especially for those of you who may not be familiar with the process. And, the MEPA process, just to clarify, in terms of commenting to the secretary, just the difference may be between the FERC process and recording everything today and ours, is generally a more informal process. So, I just want to remind people that if you want to comment to MEPA on the project, it needs to be done in writing to the secretary. Obviously, today is an opportunity for me and for other State and Local and Federal agencies, or any member of the public whose interested in the project to find out more about what is being proposed and have an opportunity to ask questions and get some additional information you need to make your comments to the secretary. Our process, we are reviewing the Expanded Environmental Notification Form at the moment and it's open. I will go through the comment periods in a moment, and we invite any member of the public to make comments to the secretary on the project, including feasible alternatives,

potential impacts, and mitigation and the monitoring studies that are proposed. I have just put a one page handout over here, if you don't have it you can take it when you leave, but it has some information on how to submit your comments to the secretary and it has all my contact information on there as well. So, feel free to contact me after the meeting too if you have any questions.

So, let me just do this brief overview first. So, on the purpose of MEPA, the Massachusetts Environmental Policy Act, and we have regulations to implement that. MEPA requires that state agencies and other proponents, in this case, the town of Edgartown, study the environmental consequences of projects that are being proposed, and really importantly need to take all feasible measure to avoid and minimize impacts. And after that has been looked at, where there are unavoidable impacts, we want to make sure there is appropriate mitigation for any damage to the environment. And there are regulations specified -- threshold for review. A project will be subject to MEPA review if it meets, you know -- two things have to happen -- one is that there is some kind of State action, whether it's a permit, funding or possible land transfer. And, the second thing is that the project trips at one of our thresholds in the regulations, which could be certain amount of wetlands alterations, you know, an acre of boarding vegetative wetlands impact in

impervious area. A lot of thresholds for traffic, for wetlands and waterways, and etc.

So, not all projects are subject to our review. So, I just -- the last one, I did just ---

So, the primary mechanism for review by us and the public also, is the Environmental Notification Form, and of course, more importantly, the Environmental Impact Report. Some projects are required to do a full Environmental Impact Report. Others that may be have less impacts, may just need to do an ENF, and then may be allowed to go to permitting after that. So a project that is subject to our view, can't go get any state permits until the MEPA review is complete.

You know, the EIR will look at alternatives and the mitigation plans, in the case of this project, and if you have looked at the ENF already that was submitted for State review, it's a pretty hefty document, and it's an Expanded Environmental Notification Form. We don't always get that much information in a first filing, but the town has asked that instead of our usual draft and final, where we have a two-stage review for draft Environmental Impact Report and a final, that they be allowed to do a single EIR. And they have -- our regulations allow that if a proponent wants to ask for that, they can submit an Expanded ENF, with more detailed information on environmental impacts and

alternatives.

So, that decision has not been made yet, it will be made as part of this review, whether a single is allowed or whether there needs to be a draft and a final.

And, our process, you know, is somewhat similar to the Federal process under NEPA, the National Environmental Policy Act where there may be an environmental assessment, and then and Environmental Impact Statement.

I'll let Michael talk about the Federal process. I'm not sure to what degree NEPA may or may not be involved.

So, as I mentioned, this project requires an Environmental Notification Form, and a discretionary EIR in that the pilot project itself may not trip our thresholds for mandatory EIR, but it is in an area that is subject to our ocean management plan, which is fairly recent State oceans management plan, and if it's in one of the multi-use areas, if it's subject to that plan, the project needs to follow MEPA and the secretary. In this case, we are requiring an EIR, so part of this meeting is a scoping session to get some, you know, get some, any comments that you might have about what information analysis, additional information analysis, you feel needs to be in the EIR.

Some of the thresholds relevant to this project will be state-listed rare species habitat, the bottom entry structure, these are just examples of some of our

thresholds. And the product includes, at the state level, a Chapter 91 license from DEP and also a 401 water quality certification, and with Natural Heritage there will be a Conservation and Management permits.

Just to clarify, that ours is not a permitting process and Michael will be talking about the Federal permitting process. The MEPA review happens before State permitting and with the goal of having, you know, coordinated review and any push from the State agencies, local and the public. We don't approve or disapprove a project. Our goal is to make sure that there is full disclosure on the project itself, and the potential impacts. And, you know, developing mitigation measures, and etc., and in the case of this project, demolishing studies, this will be an important piece.

Our secretary is Richard Sullivan, and at the end of our MEPA review there will be, you know, a certificate issued with, in this case, with the scope for the EIR. As I mentioned, we are coordinating with FERC on this one.

Just in general, you know, in our review process, you know, the town, or whoever the proponent is, will put out a public notice, letting people know that they plan to file with us, and anyone who wants, can get a copy of the ENF and can submit comments. And this project was noticed in our Environmental Monitor --- I can't remember the date,

but a couple of weeks ago. And we are -- the comments are due on March 17th. We had extended it a little bit to coincide with the FERC comment review period.

So, as I mentioned, yeah --- Just to remind you to send comments in writing. Although, you know, taking in what everyone says today.

Okay. The MEPA Certificate, we plan to issue that on the 8th, we've extended our timelines a little bit to coordinate with FERC. When our certificate is issues, once we get all the comments, and write the scope for the EIR, the certificate will be published online in the Environmental Monitor, and I've included the web address on this handout, if you want to follow along us, you can access it there.

I also want to let you know that anybody who does comments and written comments, which you can do by phone --- By phone? By fax, by email, or regular mail. And I have my email and phone or fax number on this.

Anyone that does comments is automatically included on the commenter list when the certificate issued, and the next time a document comes out in this case -- whether it's a single EIR, draft EIR, anything that is distributed, anyone that has submitted comments, gets a copy of those permits when it's issued -- you are on the circulation list.

During the EIR process, pretty similar to the comment period -- it's typically a 30 day comment period -- and the certificate is issued a week after that, which would be --- It may scope the final EIR, or it may say that the project can go ahead to permitting.

We don't usually have a public meeting at later phases, but if there is a Federal ongoing FERC review, you know, our office is certainly happy to participate in that as well. And then, an important piece of our process once the permitting is happening, is the Section 61 findings, which in any agency that is issuing a permit where an EIR is required, a State action has to issue a Section 61 findings saying, you know, that impacts that have been avoided, minimized to the maximum extent feasible, mitigation is adequate, etc. Those findings are an important part of the process because it sort of memorializes the mitigation commitments that a proponent would make on a project. And they would get notice from our Monitor as well.

Well, anyway, as I mentioned, March 17th, is when comments are due to the secretary and I think that's it in terms of what I wanted to say. I'm happy to take comments. Actually, questions, if you have questions on our process, I could take them now, or if they come up later, I'm happy to do that.

Any questions at this point?

(No response.)

So, before I hand it over to Michael, can I get a quick headcount on how many people might want to come to the landfall site, so we can be thinking about transportation?

1, 2, 3, 4, 5, 6, 6, 7, 8, 9, 10, 11, 12. Okay, all right, so I think we will be alright for vehicles, but we will figure that out. So, okay, let me pass.

MICHAEL WATTS: All right, this slide summarizes the FERC pilot license process. Which is essentially the shortened version of the FERC default licensing process, known as the Integrated Licensing Process, or the ILP, which is based upon the waiving of certain ILP requirements, found under Section V of the Permissions Regulations. Pilot license procedures were developed to streamline the licensing of hydrokinetic projects, such as this one, to allow developers, such as Edgartown, to test new hydrokinetic technology while allowing the Commission to exercise its authority under the Federal Power Act, and to allow resource agencies to be a part of the process.

In the case of the Muskeget Channel Tidal Energy Project, there's a pre-filing portion of the process, and there's a post-filing portion. Pre-filing is initiated with the filing of the draft License applications, and requests for waivers, and notice of intent. In this case, that information was filed with the Commission on February 1,

2011. This is followed by a 45-day comment period, which we are currently in, in which expires on March 17, 2011. There is an optionally public meeting, which this meeting will serve as and is based off.

Finally, pre-filing concludes with a decision by the Commission on whether to grant Edgartown use of its pilot license procedure, to file its final license application. Once FERC makes that decision, presumably Edgartown will appear and file its final license application, and from the draft application, I believe Edgartown has an anticipated filing date of February 2012. Once that information is filed, the Commission will issue a Ready for an Environmental Assessment Notice. This Notice will request terms and conditions, and preventions, and comments from the agencies. FERC will then prepare and issue a single Environmental Assessment for the project if there is a finding of no significant impact.

Finally, the post-filing will conclude with a decision by the Commission as to whether to grant Edgartown a pilot license for the project. We're still fairly early on in the process. We're only in second step of pre-filing, and then the next major step would be the filing of comments and the draft license application, which is due on March 17, 2011. That is it.

Are there any questions at this point in the FERC

process?

(No Response.)

MICHAEL WATTS: Okay. To help guide today's discussion on the issues, this list represents the list of studies that Edgartown, and monitoring plans of Edgartown is proposing, for its pilot license project. Hopefully, everyone had a chance to read through it. If not, you can submit your written comments to the Commission by February 17. We're particularly interested in hearing from you. These studies are adequate to address any concerns you may have --

MICHAEL WATTS: Sorry. Any concerns you may have about the project.

So, are there any questions on these studies at this point?

Yes?

AUDIENCE QUESTION (off mic): What are the two stars in this?

MICHAEL WATTS: I think they're starred because these are the pre-filing studies that Edgartown has used to collect the existing information on the site. And the other ones are the plans that they are proposing to do during the pilot license process.

(No Response.)

MICHAEL WATTS: Okay. If there's no questions at

this time, I will turn it over to Steve Barrett, who can give you an overview of the project.

STEPHEN BARRETT: Okay, I'm Steve Barrett, with Harris, Miller, Miller and Hanson, we are the consultant to the town of Edgartown on this project, and we prepared the FERC license and application and the MEPA Extended Environmental Notification Form, and I will give a brief overview of the project that is proposed, and then entertain any questions.

So just a little bit of background. The Power Research Institution, Electric Power Research Institute, produced a number of tidal energy studies of different states in 2006, and this is just the cover of the report and it identifies some of the potential tidal energy sites in Massachusetts, and Muskeget Channel is down at the bottom, there between Martha's Vineyard and Nantucket. And this paper study was the entry into the project, and the study identified Muskeget Channel as probably the best site to do tidal energy development in Massachusetts.

In summer of 2007, the town filed initially a preliminary permit application with FERC, which was granted to the town in March of 2008, the preliminary permit covers the area shown in green. And what the permit does is it provides the permit holder with the exclusive right to explore the development of hydrokinetic project. So the

town obtained that from FERC, from the Federal Energy Regulatory Commission. The permit was good for a three year period, and expired on February 28 -- last week, a week ago today, and the town has refilled for another three-year period for the same area.

So, the proposal in the license application to FERC, as well as to MEPA, is for a pilot project. Which is defined as a pilot project under the FERC process. What we show here are 15 --- I'm sorry, 14 small rectangular locations, each of those is a tidal energy device. 13 of the devices would be set aside to support the commercial of tidal project, pilot project, with about a five megawatt nameplate capacity generation. One of the tidal sites shown, likely the northernmost one, would be set aside -- it's part of the application that would be set aside for the University of Massachusetts Dartmouth to conduct tidal technology testing. So, it's a joint effort between the town and UMass.

On the upper left hand corner, these two images in that box, the bottom one is -- I guess, a cross-sectional view -- if you were in the water column, standing on the bottom, looking ahead into one of these devices, and I think I have a later slide that shows that a little more clearly. And the top image is looking, as if you were flying over one of the devices looking down on top of it, and the strings

that go out to the four directions from the device in the middle are the anchor structure.

So, from Muskeget Channel where the generators are located, we're considering two different submarine cable routes to bring the power to land. One to the eastern side of Martha's Vineyard, through Chappaquiddick, and a second one to the Katama section of Edgartown. The, I guess, there are advantages and disadvantages to each of these primary alternatives, the Chappaquiddick alternative is a shorter route -- which means less comparable disturbance to the sea floor -- than the Katama alternative. But then to get the power from Chappy over to Edgartown, we'd have to do a second directional drill where we'll cross in the ferry later on to get into Edgartown center. The Katama alternative is a longer route, but then connects right up into the existing electric transmission network, and power would be brought up to the town over land.

And, for the --, I think I'll get a little bit more into the construction of the submarine cables, but for the on-land piece of the transmission upgrade, it's proposed that there would be an upgrade substation on way and near where the cables landfall and then the existing poles would be upgraded to handle the larger cable to transmit the power. There may be some need to upgrade some of the poles -- we really haven't gotten to that point yet. But, we are

now proposing a new transmission line, with, you know, with major towers or anything like that -- the concept would be for the on land, is that it would fit within the kind of the existing landscape and structures.

So, this is a close-up of each of these tidal energy units, turbine energy units, the technology that is proposed is being developed by Ocean Renewable Power Company, which is a private developer, which has a primary project in Eastport, Maine. So, Edgartown is not a technology developer. Edgartown is looking to gather technology from an outside vendor. Ultimately, the technology would need to be bid out to a developer, so it's possible that anyone that has a similar type of Gorlov Helical Turbine, you know, could be a developer, or ultimate developer of this project. So, this shows the front view and the side view with the anchors, which are primarily large chains, which are mounted to, or anchored to the sea floor.

Just a little bit on submarine cable installation, we were proposing to use Jet Plow embedment technology -- an entire cable sits on the barge, it's floated out on buoys and then sunk to the bottom. There's a little device that rides along the bottom, which fluidizes the sediment, and when it fluidizes the sediment, the weight of the cable sinks down through that liquefied sediment, and

the design is that the cable would be buried about eight feet deep into the sand. We have a lot of geotechnical work that we need to do to kind of verify all of this, but this is pretty standard technology. It was used for the Nantucket Cable Project installed in the winter of 2005-2006 successfully, and so, it's also being proposed for the Cape Wind Project, so this -- I don't know if it's the officially the least environment damaging technology, but it's the state of the art in what's used for burying cables.

These two images show somewhat close up views of the landfall locations. The one on the left is from Cappaquiddick and the one of the right is Katama. In both cases the construction piece is very similar. Where you see a red box on either side is about the location where we'd have a substation ultimately built, about a 30 by 30 structure, for construction purposes of the cable, that would be the setup location for our horizontal directional drill. What the HDD does is, it drills a pilot hole from the upland location and surfaces offshore, and then a conduit it's been large -- and a PVC conduit is put in and that's ultimately how the cable is pulled between the ocean up to the terrestrial part of the site. And what that does, is it avoids all of the land alteration in that sensitive area. Again, this is pretty standard technology. We will need to a lot of geotechnical work to refine the design of

this, and prove its feasibility, but very similarly HDD was used for the Nantucket Cable Project -- both on Nantucket side as well as on the Hyannis side.

So, the yellow box offshore, we'd have a cofferdam set up, we'd pump all the water out and then the idea would be that -- sorry --- The cable would come up in the dry in the cofferdam and then would be connected. Either would be spliced there, or it would be pulled through the conduit at that point to the upland location. So, you know, pretty sophisticated technically challenging stuff, but construction activity that's been accomplished, and you know, in this environment, close by, and the best way to install the cable and avoid a lot of environmental impacts.

One issue, we'll need some further study moving forward from both of these applications is eelgrass. This image here shows mapped eelgrass from Mass GIS's database. If you look at the eastern side of Martha's Vineyard, there is some mapped eelgrass. If you look on the southern side, where the Katama alternative would be, there's no mapped eelgrass. If you know anything about eelgrass, it doesn't like a lot of high energy surf, so that makes sense, but as part of the refinement of the design exactly where we're going to go. We'll be doing some studies of eelgrass. We have done, UMass has done some preliminary, in the field research on this already, but it wasn't presented in the

application because we hadn't interpreted the information yet. But, the goal would be to avoid all of the eelgrass impacts, if it were unavoidable in our view, then we would present that to the regulatory agencies and propose mitigation. Again, for the Nantucket Project, they could not avoid impacting the eelgrass, particularly on the Nantucket side, where they had some pretty robust eelgrass beds, and so they proposed mitigation monitoring plan, and so we would propose something like that if we couldn't avoid it. But the goal would be to avoid it.

The schedule for the project, as I mentioned, the initial preliminary permit was secured in 2008. Since that time the town has been working with UMass, and as well as the Massachusetts Clean Energy Center, Department of Energy, to fund and conduct a number of studies, which several of them are presented in our applications to FERC and MEPA. One of the initial ones at UMass verified the flow of energy through Muskeget Channel, which actually suggests that the amount of power potential was greater than EPRI [Electrical Power Research Institute] originally thought in the 2006, so that was encouraging.

But now we're into the applications and the additional environmental studies. As Michael mentioned, we have kind of a placeholder to file final license application and a single EIR with MEPA in about a year's time, and then

hopefully, we would start deploying the pilot project. The concept would be that, and this is what is proposed in the applications, is that it would be a phased development that we actually put in the full cable potential and the substations initially, but we'd only put in one unit first, and do, carry out the monitoring plans that Michael had listed up there that are in our applications -- the Fisheries Monitoring Plan, Marine Mammal and Protected Species Monitoring Plans, the Avian Monitoring Plans -- all of that would be done with an initial unit in the water, so we hoped that that would collect information on the project and kind of allow for some comfort level that we are meeting environmental state and federal environmental laws, and proceed forward with subsequent phases of the project.

I should say, ultimately, these applications are for a pilot project, as defined by FERC. We've requested an eight year license, so that after eight years, the project could go away. We feel confident that wouldn't happen, that the eight years would be used to collect information, build up the five megawatt project, and allow us to develop a larger project beyond this, which would be as much as 20 megawatts, expandable four-fold. So, that's kind of the ultimately where the project would like to go.

So that's my presentation. This is just a picture from Eastport, Maine, of one of the tidal energy

units, an ORPC, as I mentioned, has deployed from a barge. UMass is looking to deploy a barge this summer, still looking for funding, needs to coordinate with some of the agencies on, you know, what we're doing out there. But basically, the concept would be the barge would be moored out in the Muskeget Channel for maybe as much as a month, and some technology would be put in the water and we'd see how it runs and look at some things, like fish and other activity out in the Muskeget Channel. But that is still kind of coming together. It's not a part of this application, we've really just said, we're going to continue to collect information, this is part of what we would like to do.

So, with that, I guess I will take any questions.

PAUL FOLEY: Paul Foley, Martha's Vineyard Commission. Do you have any images of what the substation looks like and how big it is, the dimensions?

STEPHEN BARRETT: Okay.

I don't have any images of the substation in this application. The area of the substation would be about 30 feet by 30 feet. It would be enclosed by a fence for protection reasons, and probably should have provided a standard look at what a substation looks like, but it would look like a standard substation with different facilities switched here -- the power converter, all of that stuff,

within this 30 by 30 area. So, it will look like, well, I should say the ultimate architectural look of it, I think the goal would be that it would fit in with the kind of the surrounding landscape, other than looking like an industry facility, I would say that that would be the goal. But we don't have any plans relative to that at this point.

TENA DAVIES: Hi, Tena Davies, from MADEP. I have a couple of question.

The substation, looks like -- and I really can't tell from the slide -- that at least one of the locations might be a dune, Katama -- are you basically following Katama, or Barrier Beach, I'm not sure about that? Or, maybe even on Chappy, so it would have to be elevated.

STEPHEN BARRETT: I guess, I'm pretty confident that the Chappaquiddick one is not on a Barrier beach. And I'm not sure about the other one, so we'll have to look at it, and we'd appreciate any comments that you would have on that, and implications for where design considerations ---

TENA DAVIS: I think that the Katama one may be on one -- I was on vacation -- since it was really expanding in and out.

STEPHEN BARRETT: Yeah, okay.

TENA DAVIES: I think it may be, so it's something you'd have to consider. I also had another question about the Nantucket Cable Project and the eelgrass

beds.

STEPHEN BARRETT: That's fine.

TENA DAVIES: How did those monitoring studies come out?

STEPHEN BARRETT: Could you repeat that for me?

TENA DAVIES: The Nantucket Cable Project, you said that it went through eelgrass beds, and they did monitoring studies, it was about five years ago, so I was just wondering how the mitigation went?

STEPHEN BARRETT: I, unfortunately don't know, but I should find out.

TENA DAVIES: Okay, that's another concern that we have.

STEPHEN BARRETT: Okay, thank you.

Mark.

MARK LONDON: Mark London, Martha's Vineyard Commission, for the horizontal directional drilling, about how far offshore does that -- does the drill go through?

STEPHEN BARRETT: The locations that we've shown on this graph are approximate. The design criteria for exactly where it would go, would need to be, you know, outside a low, mean low water, with some comfortable buffer -- so, in probably, you say, five, six feet of water for the purposes of erecting the cofferdam and being able to do the work. But it wouldn't be --- it would be landward of any

eelgrass, so it would be in an area that is worked too much, that eelgrass doesn't occur, so it's kind of between that area, between the --- in the area between the mean low water point and where the eelgrass would occur. That's the design concept.

JOANN TAYLOR: JoAnn Taylor, Martha's Vineyard Commission. About the Barrier Beach issues, the containment site is not a front Barrier Beach, Barrier beaches have been mapped, it means that there's some water behind it, and that one is not a Barrier Beach, but that one has a rate of erosion of about 12 feet a year at that site. So, eventhough this is a pilot project, I would hope that you would look at the erosion rates of various sites. I mean, with a 12 foot a year erosion rate, if this is a go for another five years or so, you are already moving that site back -- . Now, the Chappy beach is more of a stable type of environment, it is -- it doesn't have near the mobility that the containment sites, it's just west of one of the most dynamic beaches that we have.

This Chappy site is much more of a stable position, the beach and the landward side, they just don't have the mobility issues of the containment site. And while you're looking at the idea of doing directional drilling to get under that dune and east beach, why not consider continuing that directional drilling out past eelgrass beds.

If there is eelgrass there, then why not continue the directional drilling? At least look at that. Look at continuing the directional drilling. If you find eelgrass there, continue the directional drilling, so that it would go under the Barrier beach, and could also just go under any eelgrass that's out there, because there's a lot of discomfort with taking a jet plow through eelgrass beds. Whereas, if you have the technology to just extend the HDD out beyond any eelgrass, I would think you would look at that option.

STEPHEN BARRETT: So, thank you for those comments.

I, guess the only thing I would say, I think there are technical challenges, not only -- there are some limitations on just how far you can go with a directional drill. I'm not sure that is an issue, I think we could technically go where you are saying. There may be some limitations in the depth of water that we can work in and build a cofferdam, or -- you know -- may not be limitations, but there may engineering challenges to that. But we will take the comment and look into and present that in the next application.

JOANN TAYLOR: Thank you.

ART SMADBECK: Art. Just so you know, what JoAnn was talking about, is not extending out here. That's not

where the eelgrass is, she was talking about doing it here.

Is that right?

JOANN TAYLOR: Well, no the slide that he showed before said that --- I'm not sure exactly where the landfall is ---

STEPHEN BARRETT: It's where the road is, yeah.

JOANN TAYLOR: It looks like there is eelgrass on this slide as well.

ART SMADBECK: I thought you said there wasn't eelgrass where there was ----

STEPHEN BARRETT: In Katama side, there is no eelgrass ---

JOANN TAYLOR: -- The Katama side, just looks like eelgrass ---

ART SMADBECK: Eelgrass, is not inside?

STEPHEN BARRETT: No.

ART SMADBECK: Okay.

JOANN TAYLOR: No, the eelgrass is out here, and if there's a way to extend HDD, depends on depth and there is a lot of current activity over here and it's probably not a favorable working environment -- for any type of work. If it's possible to extend the HDD under this eelgrass bed, it's just worth exploring. Because jet plowing through this eelgrass would not be good for the beach.

ART SMADBECK: Thank you.

STEPHEN BARRETT: Next.

JESSICA REMPEL : Jessica Rempel with the Natural Heritage Program, and again, in relation to the substations, I was also interested in any kind of operations and management of those. Once they're in, are they kind of stand alone, or is there a bit more traffic associated with that, and also the maintenance of the lines and I think I remember reading that if there was any footprint impact, that there may be mitigation -- I think there might be some parking areas for some beaches, so that would also have to be sort of mapped out for us to look at for rare species impacts in those areas.

STEPHEN BARRETT: On the operations and maintenance, they are generally stand alone facilities. Utility people would need to come out and do various utility things there on occasion, but we wouldn't -- either of these locations would not have any dedicated people there. There wouldn't be any kind of permanent presence. Along the transmission lines, you know again, utility companies put the wires up and they really don't want to have to maintain them. They'll go out and trim trees and do things like that. But there isn't a lot of operation and maintenance activity.

(cough) --- Excuse me.

--- Around the substation and transmission lines.

As far as displacement of beach parking, what we described in the application is that each of the substation locations are on existing town owned land, some of which provides parking for beach access to each of these locations, and there would be -- because the substation would be located near existing parking, that would displace some parking. The application doesn't --- and the application says that we would have to look at any implications of needing to find new locations for those parking areas. But there's no detail at this point exactly how we would do that. I think the hope would be to try and make the parking more efficient in the area that's left by defining the parking spaces more than they are now. But we will probably look for some opportunity to expand parking in areas that are already disturbed.

I can't really say much more than that at this point.

Sue.

SUSAN TUXBURY: I'm Sue Tuxbury of the National Marine Fisheries Service.

I just have a couple of questions.

First off on project boundaries, I was wondering how you came out with project boundaries, and given the fact that it looks like it's impacting the channel, is there any discussion on changing the boundary -- particularly where it

is south of Nantucket. I was just curious.

STEPHEN BARRETT: Initially when we put in for this boundary, we wanted to keep options open and look at all different areas. UMass did run current studies in most of the area, I don't think they did look as far down by Nantucket, or off of Tuckernuck and Madaket parts of Nantucket, but they did do acoustic Doppler current profiling in most of the extensions off of the main part of Muskeget Channel. Those areas were not particularly favorable, and that's why the project is proposed right in the throat of Muskeget Channel.

We have, even through our reapplication renewal, the preliminary permit, kept this boundary. We still want to keep our options open. Nantucket is a partner, cooperating partner, for the project, and their interested in keeping that option open. There's no plan at this point to do anything else, but I guess it's possible, you know, either changes in technology or additional work in this area may lead to opportunities to put smaller turbines in different locations, that might improve the overall benefit of the project. So, there's no plans, but that just kind of the thinking.

SUE TUXBURY: My second question has to do with the commercial fishing. You mentioned that this area would be closed off to commercial fishing. I was wondering if you

coordinated or at least notified the New England Fisheries Management Council of the project, and also specified exactly where within this part of the boundary you would expect for the fishing to be? I guess more updated information on the specifics of the fishing in the area.

STEPHEN BARRETT: I guess in the application, I'm not sure if we specifically said that the area would need to be closed, but we recognized that the location of these turbines would prohibit fishing and some other activities that could otherwise occur from 25 feet down to the bottom of the depth of the channel -- 100 to 160 feet. We have not communicated with the New England Fisheries Management Council about that, I think we'll look forward to doing additional outreach with the community. We have had discussions with the Coast Guard about, you know, the future presence of these structures out there. They've provided some guidance to us on the depth that we proposed, which these units are 25 feet below the surface. That's based on existing vessel traffic through the channel, types of boats that use the channel. We understand that commercial fishing activity in the channel is small or minimal, it's not a good place to fish commercially, at least for scallops and draggers and things like that. It is an area that is used by recreational fishermen for striped bass and bluefish, so there may be some conflicts there. So, I guess I would say

we haven't asked for a closure or prohibition around the area at this point, and we should -- we would like to consult with the different agencies on the best way to avoid future conflicts with this facility. And we also need to do a little bit more state/local outreach with the fishing community.

Does that answer your question?

SUSAN TUXBURY: Yes. I definitely recommend you contact the council and just notify them so they know the permit process is still out there.

STEPHEN BARRETT: Okay.

JOHN BAUMMER: John Baummer with FERC. I had a question about the test site you are looking at, and what types of turbines you're going to evaluating in the test site, and just the -- that, if you were to put --- Right now we are looking at the project as helical turbine and the impacts the environment that the helical turbine places. If you have a test site out there were you bring in different types of technologies for us to look at -- every time you have to do that, to evaluate a different turbine, would have to go through a license amendment process for that? So, if we're to issue an order for the project, every time you go into evaluate a different turbine, you may have to do a license amendment? Michael, you may want to comment on this as well.

MICHAEL WATTS: Yes, and also, just to follow up on that, you've just given an overview of what this test site is and if you've considered -- since from the draft license application, you said it won't be hooked up to the grid, if you've considered our Verdant Rule, where, if it's small experimental, then you wouldn't necessary need a license for it. So, could you speak to that?

STEPHEN BARRETT: So, on the types of technology, the concept is that UMass working with other consortium members, the Marine Renewable Energy Center, would be working together to establish a test platform in this location to study a lot of different marine renewable energy devices, but this particular platform could be used to coordinate with developers to bring in a lot of different types of technologies and study their performance as a way to kind of advance the industry to be able to --- it's very costly for any one developer to go out and try and install or test technology, so similar to what's going on in different parts of the world, and, you know, some other universities and research facilities are working to do this -- establishing a platform where UMass can work with other organizations to help develop the technologies in advance.

So, interesting comment about needing to amend the license every time, so I guess we'll have to take that into consideration, how that affects the proposal. The test

platform right now, is just set aside as one of the fourteen locations, and it's identified, it's not a lot more than that at this point. There would be a kind of dedicated communication piece, so that it's not plugged into the grid and it could be monitored separately. So that's described in the application.

As far as the Verdant Rule, we don't have any information in this application about that option, and we'll explore that as maybe one piece, or an alternative path if that, you know, were to fit our objectives.

In the back.

JOHN LOGAN: Yes, John Logan with Mass Division of Fisheries -- John Logan.

I sort of have two comments, rather than a question. I just want to follow up on Sue's comment about integrating the local fishermen. I know I have sat in on a few meetings in the past month in the RFI area, where they're proposing putting in a renewable energy area south of the Vineyard. And from that experience, I could imagine you'll have quite a bit of input from both commercial and recreational fishermen. I think the sooner you get them involved, the easier the process will be.

Also, in terms of eelgrass, I would also like to support the idea of using HDD if at all possible. I was curious, you mentioned in your presentation that mitigation

would be the last resort. You were going to try to do -- if you do the Chappaquiddick route, you'd try to avoid any possible impact, I'm just curious what ideas you guys have for minimizing or avoiding eelgrass impact if you're going to stick with the jet technology.

STEPHEN BARRETT: Not much more to say on the fishery outreach. I did fail to say that we have tried to contact the Cape Code Commercial Hook Fisherman's Association, and John Pappalardo. So we've attempted and we've just not been able to set anything up. So, that was the first place to go, but we'll reach out to the New England Fishery Management Council as well.

I have been hearing about the recent wind energy meetings, I will take that as a good point.

On the eelgrass part, I guess the --- well the --- I don't think --- a couple of things. So, what we really need to do is we need to go out and define exactly where the eelgrass is. So, that is the first step. The information we have to date suggestions that it's a patchy area, so if it is indeed a patchy area, is there a path through the eelgrass where we could conceivably do an installation and avoid eelgrass on either side. So that would kind of be the hope. Could we do that with the jet plow? That would be the preferable way to do it. Could it be achieved by hand installation for that piece? That could be an option. The

first step is to define where are the resources, when we have them, unfortunately, we don't have that for you today. That would be our next step. Then we would figure out ways to install the cable without having a direct impact on eelgrass.

Jessica.

JESSICA REMPEL: Jessica Rempel, Natural Heritage. A couple of questions just to clarify on Sue's point about the boundaries. For the purposes of the pilot application and even at full build-out, is it all within the Muskeget Channel through this proposal, or you're just using that boundary as still open to future options for other projects? With everything we've ind of talked about right now is right in that channel?

STEPHEN BARRETT: Yeah, the, I guess, the project we proposed really has nothing to do with the FERC boundary, that's what's under review. It's the tidal generators and the cables going to shore and any impacts on shore.

For future projects, the town has the right to explore anything that's within this boundary. We would have to make applications to do any additional work in those areas.

JESSICA REMPEL: So, then to follow up on that, just about monitoring plans and studies for some baseline

information -- I know you mentioned something about trying to get out there in 2011, and you also mentioned 2013 as potential deployment of the first unit, and I guess I would highly recommend getting out there sooner than later to get some baseline inventory. I commend you for the review that was done on the tributes, especially on the marine magna fauna, diving ducks, and things like that, but it seemed to highlight that there are some definite data gaps there. And so, with annual season fluctuations in species usually in this area, it would be great to have more than one seasonal or one summer worth of information on all those species.

STEPHEN BARRETT: Yeah, we've proposed fairly ambitious monitoring plans, and it's really requirement of the FERC process, so the town and future partners would need to carry out those monitoring plans as part of the implementation of the project. So, I think, you know, any specific comments you have on the monitoring plans are welcome.

So, please submit them.

Joann.

JOANN TAYLOR: JoAnn Taylor. Just want to --- you were talking about conducting outreach to some of the fishing organizations, we have a great active local commercial fishing organization, the Duke's County Martha's Vineyard Regional Fishing Association, and I can give you

their contact information. Some of them are charter captains and can give you some insight on the recreational piece, I'm not sure about Nantucket. But you do have local fishing interests which need to be honored as well.

STEPHEN BARRETT: Hopefully, we will have some money to do that.

JOHN BAUMMER: John Baummer of FERC again.

Did the units -- I think I already know the answer to this question, but are all the components of the turbine sealed, are there any secondary contaminants that can be released in the event of a failure of the turbines, such as oils, or any other things that we don't know about in these turbine generator units?

STEPHEN BARRETT: There are non-natural lubricants that are used in the units. I can provide additional information. I'm trying to remember exactly that issue, but I know that for Ocean Renewable Power Company for their proposal, they were asked similar questions, so I can get you more information, but my understanding is that there is some natural lubricants, but it's not anything that has been a concern.

JOHN BAUMMER: And then one more question, in the event that the project has to be taken down for some reason, you would be leaving the cable in place and the buried part that's jet plowed in place. You wouldn't try to dig that

out as part of project removal.

STEPHEN BARRETT: That would be our preference, that may be something that would be determined by FERC.

MICHAEL WATTS: Michael Watts, FERC. How concrete are your plans, your engineering plans, for the mooring system that the Corps PC working on? Are they pretty far along on that design? Can you speak to that?

STEPHEN BARRETT: So on the mooring design, we are similar to the turbine technology. We're taking everything that ORPC is developing and they've been providing us with guidance on how these various systems would fit in Muskeget Channel, it's a slightly different environment than what they are working with in Eastport. But they have deployed an initial anchoring system, similar to what's been shown, and put the tidal generating unit on that. So, you know, again, we're following their lead on that and our sense is that they're going to be successful with it. If something should change, then we would have to, you know, we would have to propose a different anchoring system. We'll have to modify our applications to reflect that.

ALEX STRYSKY: Alex Strysky from DEP.

Just to follow up on that question, looking at the ENF --- Maybe it would be easier if you could just describe the mooring system in more detail.

I just want to make sure I understand. I guess based on the diagram on the table, it looks like each unit is held in place by four lines, each line has a clump weight and anchor, and going from the footprint of each anchor and each clump weight as well.

STEPHEN BARRETT: There are, as you said, four anchoring points and then there's a clump weight about halfway up the chain. There's an anchor -- four of them in the chains, and in the middle of the chain is a very heavy clump weight. To tell you the exactly what the footprint of impact that is, it was used in calculating the impacts, but I don't have the numbers right off the top of my head. But the clump weight was not used in that calculation.

ALEX STRYSKY: So, the clump weights, then are meant to sit on the bottom?

STEPHEN BARRETT: They kind of come on and off. It's kind of a tough, I guess, challenging thing to quantify because it's not really in one place all the time.

ALEX STRYSKY: And the Anchor dimension is given as 21 feet by 21 feet. So that's one anchor, and for each unit there will be four of those.

Yeah, okay.

So, the unit itself, how much did that move around, up and down, and side to side when it's in place?

STEPHEN BARRETT: The unit does not move, not

supposed to move at all up and down. You know, it's positively bland, so the amount of air that is pumped into the different air stacks on it are supposed to keep it, you know, in a stable place in the water cof.

Again, this is new technology, so that's just a concept at this point, and part of the technology advancement, I'm sure, will be trying to collect information on that and verify that.

It is designed to kind of move back and forth in the water column, so laterally, so that on flood tides that move that way, the anchor lines will be taut, on the upstream side, be taut and then it would move. I can't tell you exactly how far that swing is, but it's a good question, and put it to the technology developers.

ALEX STRYSKY: Just a little more, to follow up on that, as part of the pilot, do you envision sort of moving them up and down the water column to test how effective they are? I guess, generally, for this first phase do you plan to experiment, I guess, and specifically, sort of look at location -- assuming you're not going to move the location where's it's more of an up and down of the water column.

STEPHEN BARRETT: The goal would not be to be doing a lot of experimentation like that, it would be having a design, hopefully ORPC, or some other developer, would

have an installation already in the water where they've done a lot of that. But even if they hadn't, the idea would not be to experiment in that way, it would to deploy the project -- the initial unit as proposed. If we came across some major problem, then we might go back to the drawing board and deploy additional ones in an a different way. And if there was an environmental change in that, then we might have to modify applications.

I mean, I think an anchor design, if we went with a totally radical different anchor design, after deploying the first unit, then obviously we'd have to go back and propose through all permit applications. But so the goal is not to do any experimentation. We'll be doing a lot of environmental monitoring to see when these things are in what the effects are. As far as kind of, current flow, the fastest current tends to be closest to the surface, so we've set these things, really, as close to the surface as we think is feasible without obstructing vessel traffic through the area. So, you know, if there were an opportunity to put them right on the surface -- if someone said, no one's going to go up there, then we might do that. But that's not going to happen. So, just to reiterate, there's really no plan to do any experimentation with the technology. Most of the testing and verifying the technology.

ALEX STRYSKY: How about the fourteenth one,

would that go on to be UMass. So that's really a vision for technology. Not so much experimenting with what you just said. It sounds like technology could require some --- so, yeah.

STEPHEN BARRETT: I would say that one is just less defined, so I think FERC has some questions about that, and I'm sure the various agencies will have questions about that. So, I guess I would just say that we're seeking guidance on how to achieve what we want to achieve on the testing side, that also meets environmental laws and standards. You know, hopefully there are some ways to do that.

ALEX STRYSKY: But that fourteenth unit would be served by the cabling for the rest of the --- where did the cable attach to the transmission cable?

STEPHEN BARRETT: There would be kind of a separate cable, so it would all be installed at the same time. The way we proposed it actually, is that there would be two commercial cables in case one went down, and then there would be a separate smaller one that would just accommodate the test platform. And so that would be run separately; they all go to the substation, and then at the substation the information from the test facility would be communicated separately. It could be accessed separately, probably online.

SUSAN TUXBURY: So that test turbine would actually be anchored to the grid?

STEPHEN BARRETT: No, I'm sorry. All the cables would be run together. There's two commercial scale cables and then a separate smaller line to the test platform. They would all go through the same conduit, same route, installed at the same time, brought to the substation, but it would -- at that time, wouldn't be connected -- the test platform wouldn't be connected to the grid. It would have to be grounded, or something. I don't really have the details on what would be done with that, the intermittent electricity that would be produced.

AMY CHANG: Amy Chang. I was just wondering if you had kind of a timeframe for developing which alternative for landfall, at what point you are going to have a preferred alternative as to opposed to just considering ---

STEPHEN BARRETT: I would say that when we file our single environmental impact report and the FERC license application, at that point, we will propose the landfall of choice.

AMY CHANG: And are the preliminary studies you have talked about doing in sort of terms and other nesting birds, is that intended to take place this spring/summer, or is that a future survey?

STEPHEN BARRETT: It really is funding specific, we don't have any funding to do any term studies right now. So, ideally we have people getting out there around now, and mobilizing for this season. So, it's unlikely to happen this year.

AISLING O'SHEA: Aisling O'Shea of MEPA.

I had a related question, because I was wondering how much of the additional studies are you going to do to get a baseline information, etc., will be planned to be incorporated as part of the EIR when you do file?

STEPHEN BARRETT: I think that the way it would be set up, and I know now, we suggested that we would file a final environmental impact report and final license application in about a year, the goal would be to have some additional field studies filed for that application. It may not be all the baseline, but there would be additional information filed. How much of that? It's hard to determine at this point, but for example, there may be some, you know, relatively critical information that comes out of this process that we feel like we really need to file, we're not going to get a adequate determination from the agencies. So the timing may be affected by some of the comments.

So, it may, you know, things may delay little bit more if we don't have funding available to get some of this stuff done.

SUSAN TUXBURY: I was just wondering if you do have funding, like what studies do you plan on doing this season?

STEPHEN BARRETT: So, right now we have a grant from the Department of Energy that we've been using to do lots of great things. But, we have a couple --- and then we have a couple of other funding sources, primarily through UMass, they're also supporting this project. What we are primarily doing now, we are developing a sediment transport model, so there's some data collection associated with that. And the purpose of that modeling effort again, will be to understand if you put the tidal units in, how's that going to change the dispersement of sediment and habitat potentially through the system. So, Woods Hole is the primary team lead on that effort, and UMass has been supporting collecting field data to support the developing of the baseline model before we kind of drop the turbines in and see what the results are.

Additional data collection is proposed, I mentioned UMass is hopefully going to do demonstration of the unit and through that effort, there's a proposal to look at zooplankton, that might go through the turbine units. I guess, there is some funding to do that, so you know, that would be kind of a near term to look at. The eelgrass surveys that I've mentioned, we have funding to do that.

What else? We don't --- We really are looking for some additional support to do the fisheries and protected species field work. We don't have any funding for that at this point.

AISLING O'SHEA: That helps answer my question as well -- just asked in a different way. That was curious, because obviously you come into the process and what the scope will determine the studies you need to do when you come back for EIR, but what I wasn't sure of was, in the filing you talked about the various studies you were going to do, and I wasn't sure of your timeline -- if you are planning on filing in a year or so, based on your timeframe with the filing with FERC -- how much of that you would have completed. Like, for example, a sediment transport model, is that something that you anticipate completing within the year?

STEPHEN BARRETT: Yeah, all the work that's currently funded should be available by the end of this calendar year, including the sediment transport modeling, and the eelgrass surveys. I should have mentioned we're doing some scour studies, putting some cement blocks down in the channel to look at scouring effects, as well as bio-fowling on the sediment blocks, so you UMass is doing some research related to that. I think they also have some funding to do some preliminary background acoustic surveys.

So, I guess it's somewhat piecemeal, but we're starting to put into place some of the studies really looking for some additional support -- particularly on the fisheries and protected species area.

ALEX STRYSKY: Let me get an idea of the area of the project pertaining to turbine planning, located in ---- So if you were to draw a box, would you know how large that box ---

STEPHEN BARRETT: I should know off the top of my head. So, each of the units is about 800 by 800, so times 14 -- that's kind of the aerial extent.

ALEX STRYSKY: Plus, the spacing in between.

STEPHEN BARRETT: No, actually it's going to be in a grid pattern, so the way that's set up is each of those anchor units would be connected, more or less.

So, we would have -- the anchors would be between two adjoining units -- would have their own separate anchors, they would be right next to each other, so that's sufficient spacing. The anchoring system has to be set up pretty wide, so that allows for the spacing we need between the units.

AISLING O'SHEA: Does anyone else have any questions or comments while we're here?

If not, I guess we can finish up this session and get organized to head out to the landfall site.

MICHAEL WATTS: Just to remind you that your comments on the draft license application --

Sorry, this is Mike Watts, FERC.

Just a reminder that your comments for the draft application, particularly those long term plans that are proposed by Edgartown are due by March 17, 2011.

AISLING O'SHEA: Okay, thanks.

(Meeting Adjourned.)